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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/813,858	03/22/2001	Kent S. Wood	N.C. 79,849	3342

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[REDACTED] EXAMINER

LEE, SHUN K

[REDACTED] ART UNIT

[REDACTED] PAPER NUMBER

2878

DATE MAILED: 08/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Nil

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/813,858	WOOD ET AL.
	Examiner Shun Lee	Art Unit 2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 31 March 2003.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 54-102 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 54-56, 60-71, 75-84 and 100 is/are allowed.
- 6) Claim(s) 72-74, 85-99, 101 and 102 is/are rejected.
- 7) Claim(s) 57-59 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on 31 March 2003 is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The declaration under 37 CFR 1.132 filed 31 March 2003 is sufficient to overcome the rejection of claims 1-19, 21, 23, 24, and 28-30 based upon Van Vechten et al. (18<sup>th</sup> International Conference on Thermoelectrics 1999, pg. 477-480) and the rejection of claims 37-43, 46-48, 50, and 51 based upon Gulian et al. (IEEE Trans. on Applied Superconductivity 1999, 9:3194-3197).

### ***Information Disclosure Statement***

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Drawings***

3. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 31 March 2003 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

### ***Specification***

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that

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the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

5. The abstract of the disclosure is objected to because it lacks an adequate and clear statement of the disclosed invention (*i.e.*, an anisotropic thin superconducting oxide film; see MPEP § 608.01(b)). Correction is required.
6. The disclosure is objected to because of the following informalities: on pg. 5, "11" in line 18 should probably be --11a--. Appropriate correction is required.
7. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

#### ***Claim Objections***

8. The numbering of claims is not in accordance with 37 CFR 1.75(f) which requires that claims shall be numbered consecutively in Arabic numerals. It is noted that there are two claims numbered 73. The first misnumbered claim 73 (fourth line on pg. 5 of amendment filed 31 March 2003) has been renumbered as claim 102.
9. Claims 57-59 are objected to because of the following informalities:
  - (a) in claim 57, "a photon" on line 1 should probably be --said photon-- (see "a photon" on line 7 in claim 54);

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(b) in claim 58, "said heat" on line 1 should probably be --heat--; and

(c) in claim 59, "said heat" on line 1 should probably be --heat--.

Appropriate correction is required

***Claim Rejections - 35 USC § 112***

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claim 101 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 101 recites the limitation "generating a voltage differential in response to said photon received on said substrate" which was not described in the specification.

12. Claim 101 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 101 recites the limitation "generating a voltage differential in response to said photon received on said substrate" which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly

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connected, to make and/or use the invention since there is no disclosure of how a voltage differential is generated when a photon is received on the substrate.

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 72-74, 91, 97, and 102 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 72, 73, and 91 recite "is selected from the group comprising" renders the claims indefinite because the claims include elements not actually disclosed (those encompassed by "the group comprising"), thereby rendering the scope of the claims unascertainable.

Claim 97 recites the limitation "said insulating layer" in line 2. There is insufficient antecedent basis for this limitation in the claim.

15. Claims 85-99 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant should note that the specification defines a lateral direction (see y axis in Fig. 11a) where a voltage differential is generated (Eq. 18) and measured.

Claim 85 recites the limitation "generating a voltage differential across the sensor in a longitudinal direction which is perpendicular to the plane of the sensor" which is vague and indefinite since it is unclear how the plane is oriented relative to the sensor.

Claims 98 and 99 recite the limitation "longitudinal direction" which is vague and indefinite since it is unclear how the longitudinal direction is oriented relative to the sensor.

***Allowable Subject Matter***

16. Claims 54-56, 60-71, 75-84, and 100 are allowed.
17. The following is a statement of reasons for the indication of allowable subject matter: the instant application is deemed to be directed to an nonobvious improvement over the cited prior art. The improvement comprises in combination with other recited elements, disposed upon a substrate or wafer, a thermoelectric sensor thermally coupled to a photon absorber and a heat sink.

***Conclusion***

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (703) 308-4860.

The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

SL

August 6, 2003



DATI PORTA  
SUPERVISORY PATENT EXAMINER  
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